UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/751,293	12/28/2000	Darwin A. Engwer	003239.P070	8609

7590 03/19/2004	EXAMINER
Thien T. Nguyen BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP 12400 Wilshire Boulevard, Seventh Floor Los Angeles, CA 90025-1030	PATHAK, SUDHANSHU C

ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *December 28th, 2000*.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-57* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-5,7,9-16,18-25,27-34,36-40,42-48 and 51-55* is/are rejected.

7) ☒ Claim(s) *6,8,17,26,35,41,49,50,56 and 57* is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on *December 28th, 2000* is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *1*.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-to-57 are pending in the application.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-5, 7, 9, 28-34, 36-40, 42-48 & 51-55 are rejected under 35 U.S.C.

103(a) as being unpatentable over Engwer et al. (5,987,062) in view of IEEE

Standard (ISO/IEC 8802-11, ANSI/IEEE Std 802.11; August 20, 1999; Pages 34-

58) in further view of Menezes et al. (5,621,894).

Regarding to Claims 1-5, 7, 9, 28-34, 36-40, 42-48 & 51-55, Engwer discloses a

local area networks and particularly a wireless local area network having distributed

control and supporting roaming mobile units (MU) in terms of their contact with

network access points (AP) (Column 1, lines 15-25 & Fig. 1-2). Engwer discloses an

access point to extend the area of coverage of the network since the access point is

connected to some form of fixed network i.e. the access point acts as a relay that

receives the mobile unit data packets off the air and transmits them on the fixed

backbone network and vice versa (Column 1, lines 47-58 & Fig. 1 & Claim 8).

Engwer discloses mobiles units to include various computing devices for multiple

applications comprising a transmitter/receiver as well as suitable hardware to

support wireless communications (Column 3, lines 25-30, 63-67 & Column 4, lines 1-

10 & Claim 34). Engwer also discloses that the AP transmits various "beacon"

signals to initiate communications and transmit various messages to the MU

regarding the AP and the network (Column 4, lines 10-35, 55-67 & Column 5, lines

1-20 & Claims 11-12). Engwer also discloses the MU performing a certain action

based (roaming / handoff) on receiving a test pattern from the AP and comparing it

to an appropriate threshold value (Column 2, lines 30-65 & Column 3, lines 7-25 &

Column 4, lines 27-56, 55-67 & Column 5, lines 1-20 & Claims 21-22). However,

Engwer does not disclose the AP informing multiple MU's or vice versa individual

data compression capabilities and optionally compressing data prior to transmitting

data to and from the MU or the AP.

IEEE Standard for wireless LAN (802.11) discloses a frame structure for

communications between the access points and the mobile units in a wireless LAN

networked environment. The standard further discloses the various types of frames

used to communicate between the devices to indicate the type of data being

communicated including management, control and data frames (Page 35, Sec. 7.1.3

& Page 36, Table 1). The Standard discloses that the management frame further

includes a "Capability Information Field" used to contain requested or advertised

capabilities (Page 51, Sec. 7.3.1.4), a "Status Code Field" used in response to

indicate or failure of a requested operation (Page 54, Sec. 7.3.1.9). The Standard

further discloses an "Information Element" field to discloses various capabilities of

the devices such as "Supported Rates", "Frequency hopping" etc. (Page 55, Sec.

7.3.2, Table 20). Therefore, it would have been obvious to one of ordinary skill in

the art at the time of the invention that the wireless LAN protocol provides

capabilities for messaging and data transfer between the devices in the network for

communication purposes and can be implemented in the system as described in

Engwer, furthermore the managing frame can be implemented and transmitted in the

beacon transmitted as described in Engwer to transmit information and status of the

respective devices. However, Engwer in view of the IEEE Standard does not

disclose transferring data compression capabilities between the MU and the AP.

Menezes discloses a system and method for exchanging data processing

capabilities between multiple computing devices (Abstract, lines 1-24 & Fig. 3,

element 104). Menezes discloses exchanging capabilities so as to implement the

most efficient data format for the two devices (Abstract, lines 2-5 & Column 9, lines

1-8 & Fig. 4, element 122). Menezes further discloses data processing capabilities

to include relating to resolution and data compression (Column 9, lines 5-15 &

Column 13, Table 2 & Column 13, lines 18-30, 43-64 & Claim 17). Menezes

discloses sending data compression information either as a messaging signal or by

sending the compressed data to the device receiving the data (Abstract, lines 5-11 &

Column 13, lines 18-67). Therefore, it would have been obvious tone of ordinary skill

in the art at the time of the invention that Menezes teaches implementing

exchanging data processing information including data compression information

between multiple devices between which data is to be exchanged to transfer the

data in a most efficient manner, this can be implemented in the system as disclosed

in Engwer in view of the IEEE Standard wherein the information exchanged in a

signaling message can be used to optionally select the optimum data compression

scheme, furthermore, the compression scheme implemented can also be disclosed

in the data packets header as described in the wireless LAN standard. The data

compression instead of hand off can also be implemented by comparing a system

parameter to a threshold value as disclosed in Engwer. Thus, Engwer in view of the

IEEE Standard in further view of Menezes discloses a wireless protocol regarding

communication between the AP and the UE wherein transmitting / receiving data

compression capabilities of each other, satisfying all the limitations of the claims.

4. Claims 10-13, 16, 19-22 & 25 are rejected under 35 U.S.C. 103(a) as being

   unpatentable over Engwer et al. (5987062) in view of IEEE Standard (ISO/IEC

   8802-11, ANSI/IEEE Std 802.11; August 20, 1999; Pages 34-58) in further view

   of Menezes et al. (5621894) in further view of Boldl (6,182,043).

Regarding to Claims 10 & 19, Engwer in view of IEEE Standard in further view of

Menezes discloses a wireless LAN system comprising access points and mobile

units transmitting a WLAN protocol further indicating data compression capabilities

to one another and optionally implementing data compression before transmitting as

described above. However the above references do not disclose considering one or

more factors before implementing data compression wherein the factors being

indicative of weather the benefit to be obtained from compressing exceeds the cost

associated with implementing compression.

Boldl discloses determining the compression of data on multiple factors wherein

the factors being indicative of weather the benefit to be obtained by implementing

compression of data exceeds the cost associated with compression (Column 1, lines 25-64). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that Boldl teaches selecting compression bases on a cost / benefit analysis and implementing data compression if the benefit exceeds the cost as defined by the system parameters and algorithm described in the system in Engwer in view of IEEE Standard in further view of Menezes, thus satisfying the limitations of the claim.

Regarding to Claims 11, 12, 20 & 21, Engwer in view of IEEE Standard in further view of Menezes in further view of Boldl discloses a wireless LAN system comprising access points and mobile units transmitting a WLAN protocol further indicating data compression capabilities to one another and optionally implementing data compression before transmitting based on a cost/benefit analysis as described above. Menezes further discloses that a first device sends a list of it's data processing capabilities to the second device, which are then examined along with it's own capabilities to determine the most efficient data format for the transfer (Abstract, lines 1-11). Menezes further discloses data compression as an example of data processing capabilities (Column 9, lines 9-30). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that Menezes discloses comparing capabilities of multiple devices before transmitting data, and furthermore, it is obvious that both the devices need to have compatible data compression capabilities before transmitting compressed data, thus Engwer in view

of IEEE Standard in further view of Menezes in further view of Boldl, satisfies the limitations of the claim.

Regarding to Claims 13 & 22, Engwer in view of IEEE Standard in further view of Menezes in further view of Boldl discloses a wireless LAN system comprising access points and mobile units transmitting a WLAN protocol further indicating data compression capabilities to one another and optionally implementing data compression before transmitting based on a cost/benefit analysis as described above. Boldl also discloses selecting compression based on the size of the data to be stored or the number of data messages in finite memory source and if the data to be stored is greater than the available memory in the device than data compression mode is implemented (Abstract, lines 1-13 & Column 1, lines 40-64). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that Boldl teaches implementing data compression depending on the size and number of messages to be stored, furthermore this factor, the size of the data, can be implemented in the system as described in Engwer in view of IEEE Standard in further view of Menezes wherein the size of the data to be transmitted be a factor in selecting data compression on the data transmitted between the UE and the AP, thus satisfying the limitations of the claim.

Regarding to Claims 16 & 25, Engwer in view of IEEE Standard in further view of Menezes in further view of Boldl discloses a wireless LAN system comprising access points and mobile units transmitting a WLAN protocol further indicating data compression capabilities to one another and optionally implementing data

compression before transmitting based on a cost/benefit analysis as described above. Boldl also discloses selecting the compression of the data and the type of compression (lossy / lossless) based on the priority of the data as selected by the user wherein for a high priority data may not be compressed or compressed at a lower compression ratio while a low priority data may be compressed at a high compression ratio (Column 3, lines 45-64). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that Boldl teaches the selection of data compression based on the type of data, and this can be implemented in the system as described in Engwer in view of IEEE Standard in further view of Menezes as a factor in evaluating weather the data type is suitable for compression before transmission, thus satisfying the limitation of the claim.

5. Claims 18 & 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Engwer et al. (5987062) in view of IEEE Standard (ISO/IEC 8802-11, ANSI/IEEE Std 802.11; August 20, 1999; Pages 34-58) in further view of Menezes et al. (5621894) in further view of Boldl (6,182,043) in further view of Hwang (6,614,937).

Regarding to Claims 18 & 27, Engwer in view of IEEE Standard in further view of Menezes in further view of Boldl discloses a wireless LAN system comprising access points and mobile units transmitting a WLAN protocol further indicating data compression capabilities to one another and optionally implementing data compression before transmitting based on a cost/benefit analysis as described above. However, the above-mentioned references do not disclose implementing the

data compression based on the relative computational power of the access points or the mobile units.

Hwang discloses using different compression techniques depending on the computational power of the devices used for implementing the data compression schemes (Column 1, lines 14-31). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that Hwang teaches implementing multiple data compression schemes depending on the computational resources of the devices implementing the scheme, and can be implemented in the system as described in Engwer in view of IEEE Standard in further view of Menezes in further view of Boldl as a factor in evaluating weather the data type is suitable for compression before transmission, thus satisfying the limitation of the claim.

6. Claims 14-15 & 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Engwer et al. (5987062) in view of IEEE Standard (ISO/IEC 8802-11, ANSI/IEEE Std 802.11; August 20, 1999; Pages 34-58) in further view of Menezes et al. (5621894) in further view of Boldl (6,182,043) in further view of Kanljung et al. (6,438,108).

Regarding to Claims 14-15 & 23-24, Engwer in view of IEEE Standard in further view of Menezes in further view of Boldl discloses a wireless LAN system comprising access points and mobile units transmitting a WLAN protocol further indicating data compression capabilities to one another and optionally implementing data compression before transmitting based on a cost/benefit analysis as described above. However, the above-mentioned references do not disclose implementing the

data compression based on a factor indicating how much data are waiting in a

queue to be transmitted or indicating a relative position of the data to be compressed

with respect to the other data in the queue.

Kanljung discloses compressing a plurality of acknowledgement packets, within

the acknowledgement queue, into a single packet to be transmitted (Abstract, lines

3-16). Kanljung discloses this solution when the acknowledgement packets are

generated faster than they can be transmitted and the acknowledgement queue fills

to a maximum size so as to adversely effect the performance of the system i.e. loss

of packets or decrease in the data rates, the compression of the acknowledgement

packets is performed to maintain the performance of the system (Column 1, lines 65-

67 & Column 2, lines 1-67 & Column 3, lines 25-53). Therefore, it would have been

obvious to one of ordinary skill in the art at the time of the invention that Kanljung

teaches using the amount of data waiting in the queue to decide implementing data

compression and implementing the algorithm as described in Kanljung in the system

as described in Engwer in view of IEEE Standard in further view of Menezes in

further view of Boldl as a factor reduces the loss of data due to queue overflow, thus

satisfying the limitations of the claim.

Allowable Subject Matter

7. Claims 6 & 8,17, 26, 35, 41, 49-50, 56-57 are objected to as being dependent

    upon a rejected base claim, but would be allowable if rewritten in independent

    form including all of the limitations of the base claim and any intervening claims.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sudhanshu C. Pathak whose telephone number is (703) 305-0341. The examiner can normally be reached (Monday-Friday from 8:30 AM to 5:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin, can be reached at (703) 305-4714.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks Washington, D.C. 20231

Or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to:

Crystal Part II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

STEPHEN CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600